CLAIMS

What is claimed is:

1. A fibrous assembly comprising:

a first fiber that sequesters a first reactive component; and

a second fiber that sequesters a second reactive component,

wherein at least the first or second fiber releases its reactive component when the fiber is in the presence of a releasing agent, and

wherein when the at least first or second fiber releases its reactive component, the first and second reactive components react with each other to form a reaction product.

2. The fibrous assembly of claim 1, wherein at least the first or second fiber is polymeric.

3. The fibrous assembly of claim 1, wherein at least the first or second fiber is a nanofiber.

4. The fibrous assembly of claim 1, wherein at least the first or second fiber is a nanofiber prepared by an electrospinning or gas-jet method.

5. The fibrous assembly of claim 1, wherein at least the first or second reactive component is a particle, a dissolved molecule, a fibrous skeleton that was created by electrospinning, a uniform coating, a ribbon, a tube, a gas-filled pore, a fluid-filled pore, or bound to an ion-exchange-resin bead.

6. The fibrous assembly of claim 1, wherein the reaction product of the first reactive component and the second reactive component is nitric oxide.

7. The fibrous assembly of claim 1, wherein the first reactive component is a carboxylic acid and the second reactive component is nitrite.

8. The fibrous assembly of claim 1, wherein the first reactive component is a urethane prepolymer and the second reactive component is a diamine or diol.

9. The fibrous assembly of claim 1, wherein at least the first or second reactive component is bound to an ion-exchange-resin bead.

10. The fibrous assembly of claim 1, wherein the releasing agent is a solvent, a signaling substance, radiation, heat, a mechanical force, a charged particle, an electron, a magnetic particle, a magnetic field, forces from a flowing fluid, hydrostatic pressure, mechanical deformation, or a combination thereof.

11. The fibrous assembly of claim 1, wherein the releasing agent is a solvent.

12. The fibrous assembly of claim 1, wherein at least the first or second fiber dissolves or swells in the presence of the releasing agent.

13. The fibrous assembly of claim 5, wherein the fluid is a wax, oil, oligomer-containing fluid, low-molecular-weight liquid, or combination thereof.

14. The fibrous assembly of claim 7, wherein the carboxylic acid is ascorbic acid.

15. A method for preparing a fibrous assembly comprising the steps:

preparing a first fiber that sequesters a first reactive component;

preparing a second fiber that sequesters a second reactive component; and

incorporating the first and second fiber into a fibrous assembly,

wherein at least the first or second fiber releases its sequestered reactive component when that fiber is exposed to a releasing agent, and

wherein when at least the first or second sequestered reactive component is released from its respective fiber, the first and second reactive components react with each other to form a reaction product.

16. The method of claim 15, wherein the step of preparing a first fiber or the step of preparing a second fiber is performed by using at least an electrospinning or gas-jet method.

17. The method of claim 15, wherein the first fiber is prepared by electrospinning a first electrospinnable solution having a first polymer and a first reactive component; and

the second fiber is prepared by electrospinning a second electrospinnable solution having a second polymer and a second reactive component,

wherein the second reactive component is reactable with the first reactive component.

18. The method of claim 15, wherein a reaction product of the first reactive component and the second reactive component is nitric oxide.

19. The method of claim 15, wherein the first reactive component is a carboxylic acid and the second reactive component is nitrite.

20. The method of claim 15, wherein the first reactive component is a urethane prepolymer and the second reactive component is a diamine or diol.

21. The method of claim 15, wherein at least the first or second reactive component is bound to an ion-exchange-resin bead.

22. The method of claim 15, wherein at least the first or second reactive component is a particle, a dissolved molecule, a fibrous skeleton that was created by electrospinning, a uniform coating, a ribbon, a tube, a gas-filled pore, a fluid-filled pore, or bound to an ion-exchange-resin bead.

23. The method of claim 17, wherein electrospinning the first electrospinnable solution results in a first fiber that sequesters the first reactive component, and wherein

electrospinning the second electrospinnable solution results in a second fiber that sequesters the second reactive component.

24. The method of claim 19, wherein the carboxylic acid is ascorbic acid.

25. The method of claim 22, wherein the fluid is a wax, oil, oligomer-containing fluid, low-molecular-weight liquid, or combination thereof.

26. A medical-treatment method comprising the step:

treating a patient with a fibrous assembly, wherein the fibrous assembly has

a first fiber that sequesters a first reactive component; and

a second fiber that sequesters a second reactive component,

wherein at least the first or second fiber releases its reactive component when that fiber is exposed to a releasing agent, and

wherein when at least the first or second reactive component is released from its respective fiber, the first and second reactive components react to form a reaction product.

27. The method of claim 26, wherein a reaction product of the first reactive component and the second reactive component is nitric oxide.

28. The method of claim 26, wherein the first reactive component is a carboxylic acid and the second reactive component is nitrite.

29. The method of claim 26, wherein the releasing agent is a solvent, a signaling substance, radiation, heat, a mechanical force, a charged particle, an electron, a magnetic particle, a magnetic field, forces from a flowing fluid, hydrostatic pressure, mechanical deformation, or a combination thereof.

30. The method of claim 26, wherein at least the first or second fiber is a nanofiber.

31. The method of claim 26, wherein at least the first or second fiber is a nanofiber prepared by an electrospinning or gas-jet method.

32. The method of claim 28, wherein the carboxylic acid is ascorbic acid.

33. A method for creating an epoxy-type adhesive comprising the step:

adding a releasing agent to a fibrous assembly having a first fiber that sequesters a urethane prepolymer and second fiber that sequesters a diamine,

wherein at least the urethane prepolymer or the diamine is released from its fiber when that fiber is in the presence of the releasing agent, and

wherein when at least the urethane prepolymer or the diamine is released from its respective fiber, the urethane prepolymer and diamine react with each other to form an epoxy-type adhesive.

34. The method of claim 33, wherein the releasing agent is water.

35. A fibrous assembly comprising:

a first fiber that sequesters a first reactive component,

wherein when the first reactive component is in the presence of a releasing agent, the first reactive component reacts with the releasing agent to produce a reaction product.

36. The fibrous assembly of claim 35, wherein the first fiber is polymeric.

37. The fibrous assembly of claim 35, wherein the first fiber is a nanofiber.

38. The fibrous assembly of claim 35, wherein the first fiber is a nanofiber prepared by an electrospinning or gas-jet method.

39. The fibrous assembly of claim 35, wherein at least the first reactive component is a particle, a dissolved molecule, a fibrous skeleton that was created by electrospinning,

a uniform coating, a ribbon, a tube, a gas-filled pore, a fluid-filled pore, or bound to an ion-exchange-resin bead.

40. The fibrous assembly of claim 35, wherein the reaction product of the first reactive component and the releasing agent is nitric oxide.

41. The fibrous assembly of claim 35, wherein the first reactive component is a carboxylic acid or nitrite.

42. The fibrous assembly of claim 35, wherein the first reactive component is a urethane prepolymer, a diamine, or a diol.

43. The fibrous assembly of claim 35, wherein at least the first reactive component is bound to an ion-exchange-resin bead.

44. The fibrous assembly of claim 35, wherein the releasing agent is a solvent, a signaling substance, radiation, heat, a mechanical force, a charged particle, an electron, a magnetic particle, a magnetic field, forces from a flowing fluid, hydrostatic pressure, mechanical deformation, or a combination thereof.

45. The fibrous assembly of claim 35, wherein the releasing agent is a solvent.

46. The fibrous assembly of claim 35, wherein the first fiber dissolves or swells in the presence of the releasing agent.

47. The fibrous assembly of claim 39, wherein the fluid is a wax, oil, oligomer-containing fluid, low-molecular-weight liquid, or combination thereof.

48. The fibrous assembly of claim 41, wherein the carboxylic acid is ascorbic acid.